

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-9 (Cancelled)

Claim 10 (Currently amended): A circuit package comprising:

a base portion having a first surface, a second surface, a first via, a second via, and a plurality of pins;

a first metal pattern disposed on the first surface;

a second metal pattern electrolytically and selectively plated with a metal of a first type disposed on the second surface, the second metal pattern being electrically coupled to the first via; and

a third metal pattern electrolytically and selectively plated with a metal of a second type different from the first type disposed on the second surface and arranged to form a gap to electrically isolate the second metal pattern from the third metal pattern, the third metal pattern being electrically coupled to the first metal pattern through the second via.

Claim 11 (Original): The circuit package of claim 10, wherein the base portion comprises a substrate.

Claim 12 (Original): The circuit package of claim 10, wherein the base portion comprises a ceramic substrate.

Claim 13 (Original): The circuit package of claim 10, wherein the base portion comprises one of an alumina substrate and an aluminum nitride (AlN) substrate.

Claim 14 (Currently amended): A circuit package comprising:

a base portion having a first surface, a second surface, a first via, a second via, and a plurality of pins;

a first metal pattern disposed on the first surface;

a second metal pattern disposed on the second surface, the second metal pattern being electrically coupled to the first via;

a nickel-plated pattern electrolytically and selectively disposed on the second metal pattern; and

a third metal pattern disposed on the second surface and arranged to form a gap to electrically isolate the second metal pattern from the third metal pattern, the third metal pattern being electrically coupled to the first metal pattern through the second via.

Claim 15 (Currently amended): A circuit package comprising:

a base portion having a first surface, a second surface, a first via, a second via, and a plurality of pins;

a first metal pattern disposed on the first surface;

a second metal pattern disposed on the second surface, the second metal pattern being electrically coupled to the first via;

a third metal pattern disposed on the second surface and arranged to form a gap to electrically isolate the second metal pattern from the third metal pattern, the third metal pattern being electrically coupled to the first metal pattern through the second via; and

a gold-plated pattern electrolytically and selectively disposed on the third metal pattern.

Claim 16 (Currently amended): A circuit package comprising:

a base portion having a first surface, a second surface, a first via, a second via, and a plurality of pins;

a first metal pattern disposed on the first surface;

a second metal pattern disposed on the second surface, the second metal pattern being electrically coupled to the first via;

a third metal pattern disposed on the second surface and arranged to form a gap to electrically isolate the second metal pattern from the third metal pattern, the third metal pattern being electrically coupled to the first metal pattern through the second via; and

a single unitary heat sink arranged to dissipate heat from a device built on the circuit package,

wherein the base portion comprises an opening arranged to engage the heat sink, and
wherein the third metal pattern comprises an opening arranged to expose the device to the heat sink.

Claim 17 (Original): The circuit package of claim 16,

wherein the base portion opening comprises a first perimeter edge, and

wherein the heat sink comprises:

a body having the same size and same shape as the base portion opening, and
a flange extending outwardly from the body having a second perimeter edge larger than the first perimeter edge.

Claim 18 (Original): The circuit package of claim 16, wherein the heat sink is engaged with the base portion via a braze alloy, the braze alloy providing a hermetic seal between the opening and the heat sink.

Claim 19 (Original): The circuit package of claim 18, wherein the braze alloy comprises a copper silver braze alloy.

Claim 20 (Original): The circuit package of claim 16, wherein the heat sink comprises a copper tungsten alloy heat sink.

Claim 21 (Original): The circuit package of claim 16,
wherein the heat sink comprises an upper surface and a lower surface having more surface area than the upper surface, and
wherein the upper surface is exposed on the second base portion surface and the lower surface is exposed on the first base portion surface when the heat sink is engaged with the base portion.

Claim 22 (Currently Amended): A circuit package comprising:
a substrate having a plurality of pins, a top surface, a bottom surface, a first via, a second via and an opening; and
a single heat sink having a top surface and a bottom surface, the single heat sink adapted to effectively dissipate heat and positioned within the opening such that the top surface is exposed through the top surface of the substrate and the bottom surface is exposed through the bottom surface of the substrate.

Claim 23 (Currently amended): A circuit package comprising:
a substrate having a plurality of pins, a top surface, a bottom surface, a first via, a second via and an opening; and
a first metal pattern disposed on the top surface and electrically coupled to the first via;

a second metal pattern disposed on the bottom surface and electrically coupled to the second via, the second metal pattern being electrically isolated from the first metal pattern; and

a single unitary heat sink having a top surface and a bottom surface, the heat sink positioned within the opening such that the top surface is exposed through the top surface of the substrate and the bottom surface is exposed through the bottom surface of the substrate.

Claim 24 (Original): The circuit package of claim 23 further comprising:
a first plated pattern electrolytically disposed on the first metal pattern; and
a second plated pattern electrolytically disposed on the second metal pattern.

Claim 25 (Original): The circuit package of claim 24, wherein the first plated pattern comprises a gold plated pattern.

Claim 26 (Original): The circuit package of claim 24, wherein the second plated pattern comprises a nickel plated pattern.

Claim 27 (Currently amended): A circuit package comprising:
a substrate having a plurality of pins, a top surface, a bottom surface, a first via, a second via and an opening comprising a first perimeter edge; and
a single unitary heat sink having a top surface, a bottom surface, a body having the same size and same shape as the opening, and a flange extending outwardly from the body having a second perimeter edge larger than the first perimeter edge, wherein the heat sink is positioned within the opening such that the top surface is exposed through the top surface of the substrate and the bottom surface is exposed through the bottom surface of the substrate.

Claim 28 (Currently amended): A circuit package comprising:
a substrate having a plurality of pins, a top surface, a bottom surface, a first via, a second via and an opening; and
a single unitary heat sink having a top surface and a bottom surface, the heat sink positioned within the opening such that the top surface is exposed through the top surface of the substrate and the bottom surface is exposed through the bottom surface of the substrate, wherein the heat sink is engaged with the substrate via a braze alloy, the braze alloy providing a hermetic seal between the opening and the heat sink.

Claim 29 (Original): The circuit package of claim 28, wherein the braze alloy comprises a copper silver braze alloy.

Claim 30 (Original): The circuit package of claim 22, wherein the heat sink comprises a copper tungsten alloy heat sink.

Claim 31 (Previously Presented): The circuit package of claim 10, wherein the first metal type comprises nickel.

Claim 32 (Previously Presented): The circuit package of claim 10, wherein the second metal type comprises gold.

Claim 33 (New): The circuit package of claim 10, wherein at least one of the metal of the first type and the metal of the second type comprises a composite.

Claim 34 (New): The circuit package of claim 22, wherein the single heat sink comprises an upper body portion engaging the opening of the substrate and a lower body portion opposite the upper body portion.

Claim 35 (New): The circuit package of claim 22, wherein the top surface comprises a surface area sufficient to effectively dissipate heat.

Claim 36 (New): The circuit package of claim 22, wherein the bottom surface comprises a surface area sufficient to effectively dissipate heat through the heat sink.

Claim 37 (New): The circuit package of claim 22, wherein the bottom surface comprises a surface area larger than the opening and wherein the single heat sink comprises a lower body portion forming a flange for engaging the heat sink in the opening.

Claim 38 (New): The circuit package of claim 22, wherein the bottom surface of the single heat sink is coplanar with the bottom surface of the substrate.

Claim 39 (New): The circuit package of claim 22, wherein the top surface of the single heat sink is coplanar with the top surface of the substrate.